CLAIMS

I claim:

1. A method of reducing the number of times a tree data structure is rebalanced comprising the steps of:

(a) allowing a sub-tree of the data tree structure to grow unbalanced to a threshold level greater than one; and

(b) rebalancing the data tree structure when the threshold level is reached.

2. The method of claim 1 wherein the threshold level is $\log_2 n$ for a tree data structure having about n nodes.

3. The method of claim 1 wherein the threshold level is a constant number of levels greater than a level of a balanced portion of the tree data structure.

4. The method of claim 1 wherein the step of rebalancing the tree data structure further comprises:

(a) developing first and second sets of rebalancing operation tasks, the first set of operation tasks operable to effect a first set of element state transitions and the second set of operation tasks operable to effect a second set of element state transitions, the first and second set of element state transition being distinct one from the other;

(b) performing the first set of operation tasks in a first phase; and

(c) performing the second set of operation tasks in a second phase.

5. A method of deferring the rebalancing of a tree data structure comprising the steps of:

(a) allowing a sub-tree of the tree data structure to grow unbalanced to a length greater than one; and

(b) rebalancing the tree data structure when the length of the sub-tree reaches a threshold level.

6. The method of claim 5 wherein the threshold level is $\log_2 n$ for a tree data structure having about n nodes.

7. The method of claim 5 wherein the threshold level is a constant number of levels greater than a level of a balanced portion of the tree data structure.

8. A method of deferring the rebalancing of a tree data structure comprising the steps of:

(a) tracking the performance of operations upon the tree data structure; and

(b) rebalancing the tree data structure when an unbalanced sub-tree of the tree data structure reaches a threshold level greater than one.

9. The method of claim 8 wherein the threshold level is $\log_2 n$ for a tree data structure having about n nodes.